Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Original): A method of separating a compound of interest from a mixture, the method comprising the steps of:

(a) providing a mixture containing a compound of interest;

(b) subjecting a portion of the mixture to a separation using thin layer chromatography to determine an Rf value for the compound of interest;

(c) predicting an elution time of the compound of interest on a preparative scale HPLC column using the determined Rf value for the compound of interest;

(d) subjecting all or a portion of the remaining mixture to a preparative scale HPLC system comprising a preparative scale HPLC column; and

(e) collecting at least a portion of the compound of interest using the predicted elution time.

Claim 2 (Currently Amended): The method of claim 1 wherein the step of predicting an elution time for the compound of interest comprises:

(1) predicting a retention time of the compound of interest ~~from~~ on the preparative scale HPLC column using a predetermined correlation function between Rf value from the TLC and retention time on the preparative scale HPLC column along with the determined Rf value of the compound of interest; and

(2) selecting a window of time around the predicted retention time within which the compound is expected to elute.

Claim 3 (Original): The method of claim 1 wherein step (b) comprises:

(1) subjecting a portion of the mixture to a separation using thin layer chromatography to produce one or more spots or zones;

(2) analyzing the one or more spots or zones using a mass spectrometer to determine the spot or zone containing the compound of interest; and

(3) determining an Rf value for the compound of interest.

Claim 4 (Original): The method of claim 1 wherein an artificial neural network is used to predict the elution time in step (c).

Claim 5 (Original): The method of claim 1 wherein a dynamic correlation function is used to predict the elution time in step (c).